

Claims:

1 1. A method of operating a base station to wirelessly transmit data
2 communications to a plurality of user terminals on a carrier, the method comprising:

3 repeatedly and sequentially wirelessly transmitting time division multiplexed slots to
4 the plurality of user terminals on the carrier, wherein at least one of the time division
5 multiplied slots carries data/control intended for the plurality of user terminals, and wherein
6 the time division multiplexed slots each include a preamble;

7 wherein the preamble includes an indication of the data rate of the data/control
8 carried by the time division multiplexed slots; and

9 wherein the preamble includes a plurality of a user identifiers that identify the
10 plurality of user terminals.

1 2. The method of claim 1, wherein Walsh functions are employed as the
2 plurality of user identifiers.

1 3. The method of claim 2, wherein:

2 a first plurality of Walsh functions is modulated on an in-phase portion of the carrier
3 to identify a first plurality of user terminals; and

4 a second plurality of Walsh functions is modulated on a quadrature portion of the
5 carrier to identify a second plurality of user terminals.

1 4. The method of claim 3, wherein the indication of the data rate comprises an
2 (8,4,4) code that is modulated on the quadrature portion of the carrier.

1 5. The method of claim 3, wherein:

2 the first plurality of Walsh functions are modulated on the in-phase portion of the
3 carrier in a time division manner; and

4 the second plurality of Walsh functions are modulated on the quadrature portion of
5 the carrier in a time division manner.

1 6. The method of claim 3, wherein:

2 the first plurality of Walsh functions are concurrently modulated on the in-phase
3 portion of the carrier; and

4 the second plurality of Walsh functions are concurrently modulated on the
5 quadrature portion of the carrier.

1 7. The method of claim 1, wherein the data/control is contained in a plurality of
2 segments of the slot.

1 8. The method of claim 7, wherein the slot further carries a pilot channel and a
2 Medium Access Control (MAC) channel.

1 9. The method of claim 1, wherein the slot further carries a pilot channel and a
2 Medium Access Control (MAC) channel.

1 10. The method of claim 9, wherein Walsh functions are employed as the
2 plurality of user identifiers.

1 11. A time division multiplexed slot embodied on a carrier that carries data
2 intended for a plurality of user terminals, the slot comprising:

3 a preamble that includes an indication of a data rate of data carried by the time
4 division multiplexed slot and that includes a plurality user identifiers that identify the
5 plurality of user terminals;

6 at least one data segment that carries the data;

7 at least one pilot signal segment; and

8 at least one Medium Access Control (MAC) segment.

1 12. The time division multiplexed slot of claim 11, wherein Walsh functions are
2 employed in the preamble as the plurality of user identifiers.

1 13. The time division multiplexed slot of claim 12, wherein:
2 a first plurality of Walsh functions is modulated on an in-phase portion of the carrier
3 during the preamble to identify a first plurality of user terminals; and
4 a second plurality of Walsh functions is modulated on a quadrature portion of the
5 carrier during the preamble to identify a second plurality of user terminals.

1 14. The time division multiplexed slot of claim 13, wherein the indication of the
2 data rate comprises an (8,4,4) code that is modulated on the quadrature portion of the
3 carrier.

1 15. The time division multiplexed slot of claim 13, wherein:
2 the first plurality of Walsh functions are modulated on the in-phase portion of the
3 carrier during the preamble in a time division manner; and
4 the second plurality of Walsh functions are modulated on the quadrature portion of
5 the carrier during the preamble in a time division manner.

1 16. The time division multiplexed slot of claim 13, wherein:
2 the first plurality of Walsh functions are concurrently modulated on the in-phase
3 portion of the carrier; and
4 the second plurality of Walsh functions are concurrently modulated on the
5 quadrature portion of the carrier.

1 17. The time division multiplexed slot of claim 11, wherein the data is contained
2 in a plurality of segments of the slot.

1 18. The time division multiplexed slot of claim 17, wherein the slot further
2 carries a pilot channel and a Medium Access Control (MAC) channel.

1 19. The time division multiplexed slot of claim 11, wherein the slot further
2 carries a pilot channel and a Medium Access Control (MAC) channel.

1 20. The time division multiplexed slot of claim 19, wherein Walsh functions are
2 employed as the plurality of user identifiers.